

THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

convenes the

WORKING GROUP MEETING

ADVISORY BOARD ON
RADIATION AND WORKER HEALTH

ROCKY FLATS

The verbatim transcript of the Working
Group Meeting of the Advisory Board on Radiation and
Worker Health held in Naperville, Illinois on
December 11, 2006.

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TRANSCRIPT LEGEND

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-- "uh-huh" represents an affirmative response, and "uh-uh" represents a negative response.

-- "*" denotes a spelling based on phonetics, without reference available.

-- (inaudible)/ (unintelligible) signifies speaker failure, usually failure to use a microphone.

P A R T I C I P A N T S

(By Group, in Alphabetical Order)

BOARD MEMBERS

EXECUTIVE SECRETARY

WADE, Lewis, Ph.D.

Senior Science Advisor

National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention
Washington, DC

MEMBERSHIP

GIBSON, Michael H.

President

Paper, Allied-Industrial, Chemical, and Energy Union
Local 5-4200
Miamisburg, Ohio

GRIFFON, Mark A.

President

Creative Pollution Solutions, Inc.
Salem, New Hampshire

MUNN, Wanda I.

Senior Nuclear Engineer (Retired)
Richland, Washington

PRESLEY, Robert W.

Special Projects Engineer

BWXT Y12 National Security Complex
Clinton, Tennessee

IDENTIFIED PARTICIPANTS

BARKER, KAY, ANWAG
BARRIE, TERRIE, ANWAG
BEHLING, HANS, SC&A
BEHLING, KATHY, SC&A
BUCHANAN, RON, SC&A
CLAWSON, BRAD, ABRWH
FITZGERALD, JOE, SC&A
FIX, JACK, ORAU
HINNEFELD, STUART, NIOSH
HOFF, JENNIFER, ORAU
HOMOKI-TITUS, LIZ, HHS
HOWELL, EMILY, HHS
JESSEN, KARIN, ORAUT
MAKHIJANI, ARJUN, SC&A
MAURO, JOHN, SC&A
NETON, JIM, NIOSH
SMITH, MATTHEW, ORAU
ULSH, BRANT, NIOSH

P R O C E E D I N G S

(9:30 a.m.)

WELCOME AND OPENING COMMENTSDR. LEWIS WADE, DFO

DR. WADE: Okay. This is Lew Wade and we're going to -- we're going to formally begin. As I said, my name is Lew Wade and I have the privilege of serving as the Designated Federal Official for the Advisory Board. What we're beginning now is a meeting of the working group looking at issues surrounding Rocky Flats. This working group began by looking at the Rocky Flats site profile, and has expanded that to look at issues related to the pending Rocky Flats SEC petition. This workgroup is very ably chaired by Mark Griffon, and members are Mike Gibson, Wanda Munn and Bob Presley. All of those members are present and at the table. In the audience here we also have one Board member, Brad Clawson. Brad will not participate in the working group discussion, but -- but he is with us. Are there any other Board members on the call?

(No responses)

1 Okay, so we do not have a quorum of the Board
2 and therefore we will continue.

3 I would -- I would start by having people
4 involved at the table identify themselves. I
5 would also ask that when members of the NIOSH
6 or ORAU team or the SC&A team identify
7 themselves that they would specify whether they
8 have any conflicts relative to the Rocky Flat
9 situation. None of the workgroup members have
10 a conflict at Rocky Flats.

11 So this is Lew Wade, and I have no conflicts at
12 Rocky Flats.

13 **DR. MAKHIJANI:** I'm Arjun Makhijani with SC&A
14 and I have no conflicts.

15 **MR. GRIFFON:** Mark Griffon with the Board, and
16 no conflicts.

17 **DR. MAURO:** John Mauro with Sanford Cohen &
18 Associates. No conflict.

19 **MR. PRESLEY:** Robert Presley with the Board.
20 No conflict.

21 **MR. HINNEFELD:** Stu Hinnefeld with NIOSH. No
22 conflict at Rocky.

23 **MR. FITZGERALD:** Joe Fitzgerald with SC&A. No
24 conflict.

25 **MR. GIBSON:** Mike Gibson with the Board. No

1 conflicts.

2 **MS. MUNN:** Wanda Munn, Board. No conflicts.

3 **DR. WADE:** Now let me start on the telephone.

4 I know, Brant, you're with us. If you would

5 start, and then I would ask members of the

6 NIOSH/ORAU team to identify themselves and

7 state whether or not they have a conflict.

8 Brant?

9 (NOTE: Transmission between telephone,

10 microphone and the court reporting equipment

11 failed, making transcription in some instances

12 impossible. Those instances were primarily

13 experienced with Dr. Ulsh, as his participation

14 was the most active, but all attending by

15 telephone were affected.)

16 **DR. ULSH:** Yes, this is Brant Ulsh. I'm in

17 Cincinnati. I'm with NIOSH/OCAS and no

18 conflicts.

19 **DR. NETON:** Jim Neton in Cincinnati, as well,

20 NIOSH/OCAS. No conflicts.

21 **DR. WADE:** Other members of the team?

22 **MS. JESSEN:** This is Karin Jessen. I have no

23 personal conflicts. I'm with the ORAU team.

24 **DR. HOFF:** This is Jennifer Hoff. I'm with the

25 ORAU team and I have no personal conflicts.

1 **MS. HOMOKI-TITUS:** This is Liz Homoki-Titus
2 with Health and Human Services and I have no
3 conflicts.

4 **MR. FIX:** Jack Fix, ORAU team, no conflicts.

5 **MR. SMITH:** And Matthew Smith, ORAU team, no
6 conflicts.

7 **DR. WADE:** Any other members of the NIOSH/ORAU
8 team?

9 (No responses)

10 Again, I would ask all of you when you speak to
11 shout into the -- the piece for us, if you
12 would.

13 Are there other members of the SC&A team on the
14 line?

15 **DR. BEHLING:** Yeah, Hans Behling, no conflicts.

16 **DR. WADE:** Welcome, Hans.

17 **MS. BEHLING:** Kathy Behling, no conflicts.

18 **DR. WADE:** Welcome, Kathy.

19 **MR. BUCHANAN:** Ron Buchanan, no conflicts.

20 **DR. WADE:** Okay. What about other federal
21 employees who are on this call by virtue of
22 their federal employment?

23 (No responses)

24 Anyone? Are there any representatives of
25 petitioners or claimants, or representatives of

1 members of the Colorado delegation on the line?

2 **(UNINTELLIGIBLE):** This is (unintelligible)

3 Senator's office (unintelligible).

4 **DR. WADE:** Welcome. Thank you for joining us.

5 **(UNINTELLIGIBLE):** This is (unintelligible).

6 **DR. WADE:** Could you speak up a little louder,
7 please?

8 **MS. BARRIE:** This is Terrie Barrie with ANWAG.

9 **DR. WADE:** Good morning.

10 **MS. BARRIE:** Good morning.

11 **MS. BARKER:** And this is Kay Barker with ANWAG.

12 **DR. WADE:** Kay, always a pleasure to have you
13 with us.

14 Anyone else on the line who would like to be
15 identified?

16 (No responses)

17 Okay. Again, practice good phone etiquette,
18 speak loudly and certainly don't use speaker
19 phones. And if you're not speaking, mute.
20 Mark?

21 **MR. GRIFFON:** Okay. I -- the -- the purpose of
22 this meeting was really to update everyone
23 involved, and since -- since we're all out here
24 or most of us are out here, some have joined by
25 phone and are on the way this afternoon, but to

1 update -- to sort of update where we're at on
2 the action items from the last meeting and make
3 sure we have a path forward for -- we have a
4 scheduled meeting for January 9th of the
5 workgroup, and we all know we have another
6 Board meeting in February, so just want to make
7 sure we're all in course for the February
8 meeting.

9 And I have -- we -- we circulated the summary
10 of action items for the Rocky Flats workgroup
11 from 11/6 meeting, and I think we -- we should
12 work from those. In between this meeting and
13 the 11/6 workgroup meeting that we had in
14 Cincinnati, we did have a few phone calls on
15 December 5th and December 6th to discuss
16 certain technical issues. These -- these were
17 not full workgroup meetings, but they were
18 technical meetings between NIOSH and -- and
19 SC&A to discuss the fur-- further the neutron
20 issues and also the OTIB-38, the internal dose
21 coworker model, issues related to those two
22 things.

23 But in the -- also in between the November 6th
24 meeting and now we've had some ongoing progress
25 on these other action items that are listed on

1 this two-page summary. Once we go through
2 these today, my plan is to update this -- this
3 short version, the summary of actions of where
4 we stand, and also to update the full matrix
5 bef-- you know, well -- well before the January
6 9th meeting so we all sort of have a final
7 stance of where -- where we're at with a final
8 set of actions.

9 So having said that, I think we should just
10 work through the list in order. The first item
11 -- and -- and Brant, you're on the phone. Do
12 you have this summary document in front of you?

13 **DR. ULSH:** Mark, I don't have that summary.

14 **MR. GRIFFON:** Okay. It's the summary of action
15 items for Rocky Flats workgroup.

16 **DR. ULSH:** Yeah. No, I don't (unintelligible).

17 **MR. GRIFFON:** Okay. Well, it -- it -- I'll
18 read them out so -- I'm not sure of another way
19 to get -- I'm pretty sure I e-mailed it to
20 everyone, but it was a while ago, so...

21 Anyway, it goes through -- it has the nine
22 primary items that were discussed at that
23 meeting.

24 **COMPLETENESS OF DATA**

25 The first is completeness of data and -- let's

1 see, the first item, number one, SC&A to draft
2 sampling approach to be used in sampling for
3 all claimant radiation files up to 1993. SC&A
4 and NIOSH to review proposed approach and cases
5 to assure goals of workgroup will be met. And
6 I -- maybe -- Joe, can you give us just an
7 update on where you stand with that?

8 **MR. FITZGERALD:** Yeah. Certainly we jumped on
9 that right after the workgroup meeting and
10 began looking at the elements of the plan. We
11 did have a problem with data access for a few
12 weeks, and that posed a delay in terms of
13 finishing that completion, but Arjun and Ron
14 Buchanan have been working on the -- both the
15 sampling plan as well as the data access. And
16 Arjun, I don't know if you can provide an
17 update. We did mention that on the phone last
18 week.

19 **DR. MAKHIJANI:** Yeah, this is Arjun. Yeah, we
20 -- we -- we did have a sort of (unintelligible)
21 for a few weeks because we didn't have data
22 access, and your instruction -- the working
23 group's instruction to us was to look at both a
24 random sample as well as a sample of the highly
25 exposed workers, and to split it up into two

1 periods, '51 to '63 and '64 to '92, and we were
2 not to look at the D and D period.

3 When we did get access it was pretty easy to
4 look at the highly exposed workers because
5 NIOSH -- Rocky Flats already investigated
6 highly exposed workers and categorized them, so
7 of those, there are -- we looked at the
8 claimants among them. There were ten claimants
9 in the most highly exposed category, which was
10 category four, and then we chose ten from the
11 next category down and we looked at the 20
12 cases. There don't appear to be gaps -- this
13 is a preliminary evaluation --

14 **MR. GRIFFON:** Right, right, right.

15 **DR. MAKHIJANI:** -- we're still writing it up,
16 and just on a preliminary basis among these
17 workers and who may not fall into job types
18 that were highly exposed throughout the period
19 -- we're still looking at that, Roger Falk
20 point-- pointed that out -- but the -- there
21 don't seem to be big gaps for them, unlike when
22 we did the previous more or less random sample.
23 There were gaps in various periods for -- for
24 the workers. There don't appear to be gaps in
25 the post-'64 period, but there do appear to be

1 gaps in the earlier period. And for that
2 period they seem to be confined to the 1950s,
3 but there are significant gaps for the 1950s.
4 We're looking at the job types for that. We're
5 not done with our analysis, but we think that
6 maybe, Joe, within two weeks that this piece
7 with the highly exposed workers will be done
8 and we'll send out -- out a memo?

9 **MR. FITZGERALD:** Yeah, most of our --

10 **DR. MAKHIJANI:** Before -- well before the
11 holidays, anyway.

12 **MR. FITZGERALD:** Yeah, most of our actions are
13 directed to trying to tie up the remaining
14 actions in a couple of weeks so we can give the
15 Board a interim report by the end of the year,
16 so I think that would be the window that we
17 would aim for for this action, as well as some
18 other actions -- a couple of weeks.

19 **DR. MAKHIJANI:** Yeah, the -- the other action
20 is a little more complicated and lack of access
21 kind of held us up more on that. We weren't
22 able to dive into it because there we need a
23 random sampling plan. We have asked our
24 statistician to pick cases from the early
25 period and the later period in a random

1 fashion. He does have access to the claims and
2 he's going to give us claim numbers. I believe
3 it's going to be this week. It should not take
4 long to do the kind of -- but maybe that memo
5 will be early in the -- in the first week or
6 ten days of next year rather than this year.

7 **MR. FITZGERALD:** Right, there'll be some
8 supplements, but I think it'll follow.

9 **DR. MAKHIJANI:** Yes.

10 **DR. ULSH:** This is Brant Ulsh. I just want to
11 clarify -- you mentioned ten cases among
12 category four, the highest exposed, and then
13 ten among category three.

14 **DR. MAKHIJANI:** Yes.

15 **DR. ULSH:** So that adds 20, and then are there
16 in addition more cases that are going to be
17 included as part of the random sample?

18 **DR. MAKHIJANI:** Well, this is -- Brant, this is
19 not a random sample. The working group's
20 direction was to look separately at the highly
21 exposed workers so if there were no gaps among
22 them then there would not be a question about
23 coworker models. That was the idea -- or less
24 question, you know, that coworker models would
25 look more feasible. And so we've done that.

1 And there was also, in my understanding -- and
2 Mark, correct me if -- if I'm wrong --

3 **MR. GRIFFON:** Yeah, yeah, I think --

4 **DR. MAKHIJANI:** -- but in our understanding
5 there was --

6 **MR. GRIFFON:** -- you're correct, I think --

7 **DR. MAKHIJANI:** -- a random sample --

8 **MR. GRIFFON:** -- I think Brant's asking about
9 the number.

10 **DR. MAKHIJANI:** Well --

11 **MR. GRIFFON:** The total number, I think.

12 **DR. MAKHIJANI:** -- the -- the discussion
13 centered around the number of 19 being adequate
14 for -- for a sampling, and our own statistical
15 analysis also indicated that 19 or 20 would be
16 satisfactory for a random sample, so I've asked
17 Dr. Kemalinski* to -- to pick randomly 20 cases
18 from the earlier period and 20 cases from the
19 later period. It does --

20 **DR. ULSH:** So you're saying 40 cases?

21 **DR. MAKHIJANI:** Well, 20 for each period,
22 because each period has to be analyzed
23 separately because the different distributions.

24 **DR. ULSH:** Because I thought the total we
25 committed to at the last working group meeting

1 was ten to 15, I could go with 19. But now
2 we're talking maybe 40 or -- 40 or more?

3 **DR. MAKHIJANI:** Well, you want a statistically
4 significant result for each period, and you
5 won't get -- you won't get that result unless
6 you have -- you have that number for each
7 period of work. We haven't started this, so
8 we're at the pleasure of the working group as
9 to how you want to proceed.

10 **MR. GRIFFON:** Right, I think we -- we -- we
11 need to see this pro-- 'cause I do remember the
12 number -- the total number that we were
13 throwing around at the last workgroup meeting
14 being lower. I -- I agree with you, Brant,
15 that we were -- now how we divide these
16 periods, that's -- that's another -- that's an
17 issue. But I think if you can provide
18 something in writing on how -- you know, how
19 many, what periods, you --

20 **DR. MAKHIJANI:** Why don't --

21 **DR. ULSH:** I'm concerned that -- I think I
22 heard Arjun say that you were going to deliver
23 the random sample piece in the first ten days
24 of next year, but we have a working group
25 meeting on January 9th.

1 **MR. GRIFFON:** Right.

2 **DR. MAKHIJANI:** Okay. Why don't -- why don't
3 we do this in two steps. Why don't I send or
4 why don't we send you the sampling plan before
5 we do any analysis for approval by the working
6 group, and then we will proceed with the
7 analysis after that.

8 By the working group meeting we -- we should
9 defin-- definitely have some kind of interim
10 result, as we do at this meeting, but we don't
11 have -- we don't have a final memo to you. We
12 have some -- a pretty clear idea of what has
13 emerged among these highly exposed workers,
14 that there are significant gaps in -- in -- in
15 the monitoring pretty much seem to be confined
16 only to the 1950s.

17 **DR. ULSH:** Well, I also want to go on record
18 about significant gaps. I mean this is, you
19 know, a report that NIOSH hasn't seen. I just
20 want to approach this with caution to make sure
21 that when we say gaps we're talking about
22 unmoni-- periods where people were not
23 monitored, and the analysis part of this can
24 determine whether or not we would expect them
25 to be monitored.

1 **DR. MAKHIJANI:** Okay. Yes. Well, we're not --
2 we're not making any judgment about anything
3 else other than simply factually reporting
4 years for which there were missing data. We're
5 not -- we're not doing more than that. At --
6 at Roger Falk's suggestion we are adding the
7 job types for those years so that perhaps it
8 can facilitate those judgments that you're
9 talking about down the line. But we're -- kind
10 of a little bit cognizant about not exceeding
11 what --

12 **MR. GRIFFON:** I guess my -- yeah --

13 **DR. MAKHIJANI:** -- the working group had asked
14 us to do.

15 **MR. GRIFFON:** I agree, Brant, with your caution
16 on how to interpret that right now, that's
17 correct. I guess my -- my larger concern right
18 now is making sure we stay on course for having
19 a -- a product in time, and I don't want to
20 hold -- if we -- if -- if we wait to have a
21 plan submitted to us and then we have to
22 approve it and then you have to do the work,
23 then NIOSH has to review it, this is getting on
24 --

25 **MR. FITZGERALD:** Yeah, I think --

1 **MR. GRIFFON:** -- out a little too far.

2 **MR. FITZGERALD:** -- we need interim results by
3 certainly the end of the year, roughly
4 speaking, in time for the workgroup meeting,
5 somewhere in that time frame.

6 **MR. GRIFFON:** I think -- I think -- I think
7 Brant's concern is, on the flip side, if you've
8 got these -- is it 20 from the production part
9 --

10 **DR. MAKHIJANI:** Well --

11 **MR. GRIFFON:** -- 20 people reviewed, 20
12 individuals?

13 **DR. MAKHIJANI:** -- the analysis goes pretty
14 rapidly in the way that we've set it up now, in
15 contrast to the previous 12 that we submitted
16 to you. The previous 12 that we submitted
17 looked at the gaps and the missing data and the
18 quality -- some quality issues on a quarterly
19 basis, if there were weekly monitoring -- you
20 know, we had a lot of detail. We eliminated
21 the detail and were only looking at whether
22 there are full years of data for which -- full
23 years for which no data are available, and
24 that's all we're looking at. Now -- together
25 with the job type in that year. And so it goes

1 -- it goes fairly rapidly. This is not a long
2 process.

3 **MR. GRIFFON:** Right, but on NIOSH's side, I'm
4 not sure it would be as rapid. And I don't
5 want to speak for you, Brant, but -- is that
6 one of your concerns?

7 **DR. ULSH:** That is -- that is my concern, Mark.

8 **MR. GRIFFON:** Right, right. So -- so you have
9 -- I mean how many total cases are you
10 projecting -- right now as it's laid out, it
11 would be 20 and then 20 from each time period?
12 I --

13 **DR. MAKHIJANI:** As -- as it is laid out, there
14 -- the -- the -- the highly exposed, as
15 classified by Rocky Flats, that is done and
16 there are 20 of those. And as I've asked Harry
17 to pick 20 from each period --

18 **MR. GRIFFON:** Okay.

19 **DR. MAKHIJANI:** -- '51 --

20 **DR. ULSH:** So now you're talking 60?

21 **MR. GRIFFON:** Now you're talking 60 cases
22 total, that --

23 **DR. MAURO:** (Unintelligible) the first 20.

24 **DR. WADE:** Sixty cases.

25 **DR. MAURO:** Right, but the first 20 -- what I

1 heard -- this is John Mauro. The process --
2 I'm sort of stepping back to the original
3 meeting. By having the first 20 done where it
4 demonstrates that you have a virtu-- a
5 virtually complete dataset does not require
6 extensive follow-up analysis, it in effect
7 validates that we have a relatively complete
8 dataset for the most exposed individuals. So I
9 wouldn't put that in the same category as the
10 follow-up level of investigation that might be
11 needed for the second set of 40. Correct me if
12 I'm wrong.

13 **DR. MAKHIJANI:** We -- we could cut it back to
14 ten in each category, or 12 in each category,
15 but so -- I -- having seen Harry's analysis of
16 how much -- how many you need, if you have two
17 different distributions you need to sample from
18 each distribution. Then it's the pleasure of
19 the working group as to how confident you want
20 to be in the result. If -- if you want to be
21 reasonably confident in the result and you're
22 drawing from a large sample, you need a dozen,
23 15, 20, in that range, from each distribution.
24 If you do a total of ten from two different
25 distributions, it means you have only five from

1 each distribution. That is not going to tell
2 you a lot.

3 **MR. GRIFFON:** Well, a dozen or 15 or 20 is
4 different. I mean if -- if we could get it
5 down to a dozen in each category, I think it
6 would be closer to what we were kind of
7 discussing in the workgroup meeting, anyway.

8 **DR. MAKHIJANI:** That's fine, we can -- we can
9 do that, that's not a problem.

10 **MR. PRESLEY:** Ten, with a grand total of 20.

11 **MR. GRIFFON:** Yeah. You know I -- I -- I
12 certainly want the result to be something we
13 can hang our hat on, you know.

14 **DR. MAKHIJANI:** Sure.

15 **MR. GRIFFON:** On the other hand, I think we did
16 -- I thought we -- you know, we -- we had
17 discussions of small-- slightly smaller numbers
18 at the last workgroup meeting, so I -- I'm
19 worried that if -- if we -- if you product a
20 product, then it's going to be a very arduous
21 chore for NIOSH to review because their review
22 may have to be more detailed than your initial
23 -- you may find gaps and say here's the gaps,
24 here's the facts. But then they have to
25 explain possibly why those are there, and

1 that's a more -- a lengthier task, so --

2 **DR. MAKHIJANI:** Sure.

3 **MS. MUNN:** I have to apologize --

4 **MR. GRIFFON:** Yeah.

5 **MS. MUNN:** -- for not having my written notes
6 with me from that last meeting, the things that
7 I scribbled down when we were on the phone, but
8 my memory was -- I distinctly remember pushing
9 for 15 as a total, not -- and -- and it was not
10 clear to me at the time that I was writing my
11 notes that we were talking about four or five
12 different segments of -- of what we considered
13 to be operational phases. I -- I was thinking
14 in terms of overall, and my --

15 **MR. GRIFFON:** Well, we really have two -- two -
16 - two -- two time periods. I remember --

17 **MS. MUNN:** We were talking --

18 **MR. GRIFFON:** -- discussing that at length --

19 **MS. MUNN:** Yeah, we were talking about --

20 **MR. GRIFFON:** -- yeah, 'cause of the change in
21 practices, but --

22 **MS. MUNN:** Right, the practices --

23 **MR. GRIFFON:** -- also the production workers
24 was added on as a suggestion mainly -- I think
25 by NIOSH -- to say those are mainly the people

1 you're -- you'd be concerned about, the high,
2 most likely exposed people are not -- have a
3 lot of gaps, then we've got real problems, you
4 know.

5 **DR. ULSH:** That's correct, Mark.

6 **MR. GRIFFON:** And so -- but I think -- I think
7 the -- the -- that two time period random
8 sample needs to be a total of 20 to 25, if we
9 can get it down there and still, you know --

10 **DR. MAKHIJANI:** We can do that. I can ask
11 Harry -- our previous selection of 12 --

12 **MR. GRIFFON:** Yeah.

13 **DR. MAKHIJANI:** -- was not strictly according
14 to statistician-designed random sampling plan -
15 -

16 **MR. GRIFFON:** Right.

17 **DR. MAKHIJANI:** -- but it was, I -- I believe,
18 fairly random. Now what I could do is to
19 consult with Harry to see whether we can or
20 should be marrying the results of those --

21 **MR. GRIFFON:** Ah, yes.

22 **DR. MAKHIJANI:** -- with -- with the 15 or 20,
23 and that will cut things down. We could cut
24 things down anyway and pick ten from --

25 **MR. GRIFFON:** That -- that --

1 **DR. MAKHIJANI:** -- each period.

2 **MR. GRIFFON:** Yeah.

3 **DR. MAKHIJANI:** And then complement that in
4 some way with what we've already done.

5 **MR. GRIFFON:** With the 12 that were done, yeah.

6 **DR. MAKHIJANI:** Yes, so that will -- that will
7 reduce the amount of work. We haven't begun
8 this work --

9 **MR. GRIFFON:** Okay.

10 **DR. MAKHIJANI:** -- so it should be -- it should
11 be fairly straightforward to -- to reduce the
12 number according to whatever you -- you
13 constrain us to.

14 **MR. GRIFFON:** And you can just report to us the
15 -- the confidence that you have in that
16 sampling size, you know, what confidence --

17 **DR. MAKHIJANI:** Okay.

18 **MR. GRIFFON:** -- that gives us in the result.

19 **DR. MAKHIJANI:** We'll do that --

20 **DR. ULSH:** I think what would be helpful is if,
21 once it's decided which case it's going to be
22 looked at, if the identity of those cases could
23 be forwarded to us and we could begin to look
24 at them even before we have SC&A's conclusions
25 about them. (Unintelligible) --

1 **MR. PRESLEY:** I think that'd be a good idea.

2 **MR. GRIFFON:** That's a great -- a great idea,
3 yeah.

4 **DR. MAKHIJANI:** Yeah, great.

5 **MR. GRIFFON:** That'll facilitate the process,
6 yeah.

7 **DR. MAKHIJANI:** Yeah, we had been intending in
8 -- in any case, I think, to forward you those -
9 - those claimant numbers, and I think now we've
10 streamlined it so you'll -- you'll just be
11 proceeding at the same time and parallel as --
12 as we will.

13 **MR. GRIFFON:** So -- okay. So is that okay,
14 Brant, if we get that number out of the random
15 -- the two time periods down to say 25 total?

16 **DR. ULSH:** Well --

17 **MR. GRIFFON:** Or 24?

18 **DR. MAKHIJANI:** Twenty-four.

19 **DR. ULSH:** -- just going back to the last
20 meeting, my recollection was that we were going
21 to, in addition to the 12 that SC&A's already
22 reviewed, we were going to pick another ten to
23 15, maybe as high as 19 total. That's what I
24 remember from the last working group meeting.
25 I don't know what everyone else remembers.

1 **MR. GRIFFON:** Well, let's see if we can build
2 the -- the 12 that you've already done and --
3 and add an additional -- say not more than 20,
4 and that --

5 **DR. ULSH:** I could work with that.

6 **MR. GRIFFON:** -- that should suffice, let's
7 hope.

8 **DR. MAKHIJANI:** Yeah, so -- so let's -- let's
9 say that the new cases will be not more than
10 20, and it may be that you won't -- you won't
11 have 20 separate claimant numbers becau--
12 because the same claim may work for the earlier
13 period and the later period.

14 **MR. GRIFFON:** Oh.

15 **DR. MAKHIJANI:** So you won't -- won't
16 necessarily have all of these separate claim
17 numbers. You will have -- you'll have a sample
18 --

19 **MR. GRIFFON:** They may overlap.

20 **DR. MAKHIJANI:** -- you'll have a sample of ten
21 from each period, or a sample of 12 from each
22 period, so it -- the number of -- you're
23 sampling each distribution, but you're not sam-
24 - you can sample the same claimant twice.

25 **MR. PRESLEY:** Right.

1 **MR. GRIFFON:** Right.

2 **MR. PRESLEY:** I think you ought to from -- ten
3 from each distribution, and hold it at that,
4 not say grand total of 20 and take 19 from one
5 and one from the other.

6 **DR. MAKHIJANI:** Oh, no --

7 **MR. GRIFFON:** No, no, no, no, that's not --

8 **DR. MAKHIJANI:** -- that won't --

9 **MR. GRIFFON:** -- what you're saying.

10 **DR. MAKHIJANI:** No, no, that --

11 **MR. GRIFFON:** A total of 20, less than --

12 **MR. PRESLEY:** Right, let's make sure that we
13 get it in the --

14 **MR. GRIFFON:** Less than or equal to 20 for the
15 total of the two.

16 **DR. MAKHIJANI:** Okay.

17 **MR. PRESLEY:** But take ten from
18 (unintelligible) --

19 **MR. GRIFFON:** Is that okay, Brant? Can you --

20 **DR. ULSH:** Yeah, that'll be fine, Mark.

21 **MR. GRIFFON:** -- live with that one? Okay.

22 **DR. WADE:** Maybe I could just repeat. So in
23 the original sampling SC&A had done 12. Of the
24 highly exposed workers in category five, you've
25 selected ten; in category four you've selected

1 ten --

2 **DR. MAKHIJANI:** Dr. Wade, it's categories four
3 and three.

4 **DR. WADE:** Sorry, categories four and three,
5 and now the instruction of the working group is
6 no more than 20 in addition to make up that
7 random sample.

8 **MR. GRIFFON:** That's correct, yeah.

9 **DR. WADE:** Okay. If I could go on record
10 again, this is Lew Wade. I would just like to
11 go on record that the data access issues have
12 now been resolved and there are no data access
13 issues. John, is that correct?

14 **DR. MAURO:** That is correct.

15 **DR. WADE:** Okay. Thank you.

16 **MR. GRIFFON:** Okay, let's go on to --

17 **MR. FITZGERALD:** Well, before you do, can you
18 clarify -- I mean it sounds like, one, there
19 ought to be this sampling plan that lays out
20 the identity and the sample size, and then
21 presumably after that, the analysis. We -- we
22 covered that ground. Is that superseded now?

23 **MR. GRIFFON:** Yeah, I -- I think --

24 **MR. FITZGERALD:** That's the understanding.

25 **MR. GRIFFON:** I think we -- we -- do we need

1 the formality of a plan submitted --

2 **MR. FITZGERALD:** I'm just trying to clarify
3 that before we get too far.

4 **MR. PRESLEY:** If we put a specific --

5 **DR. ULSH:** My opinion is -- this is Brant Ulsh.
6 My opinion is that if you get at the identities
7 of the claim, that that to me would be the
8 sampling plan.

9 **MR. GRIFFON:** Okay.

10 **MR. FITZGERALD:** Okay.

11 **MR. GRIFFON:** That's fine.

12 **MR. FITZGERALD:** That's what -- it's -- the
13 identity is the basis for the plan then.

14 **MR. PRESLEY:** Either that or you -- when you
15 say you're going to take X number from each
16 group, then that is your sampling plan.

17 **MR. FITZGERALD:** Right.

18 **DR. MAKHIJANI:** Yeah.

19 **MR. GRIFFON:** That's reasonable.

20 **DR. MAKHIJANI:** And we will document how Harry
21 has selected these numbers so that people can
22 verify that they've been randomly done.

23 **DR. WADE:** And then the claim numbers for all
24 of these as quickly as possible to NIOSH.

25 **MR. GRIFFON:** Right.

1 **MR. FITZGERALD:** Right.

2 **DR. WADE:** I assume that for categories four
3 and three, those claim numbers that have been
4 identified and can be supplied to NIOSH now.

5 **DR. MAKHIJANI:** I believe they have.

6 **MR. GRIFFON:** They have those.

7 **DR. MAKHIJANI:** Brant, have you got those 20
8 numbers for the highly exposed? I believe you
9 have.

10 **DR. ULSH:** Arjun, I just want to make sure
11 we're talking about the same thing. I provided
12 to you the identities of the claimants who are
13 in category four and category three, I believe.

14 **DR. MAKHIJANI:** Yes.

15 **DR. ULSH:** If -- if there were only -- I don't
16 have the details in front of me, but if there
17 were only, I don't know, ten or however many in
18 category four, then we know those. Or can you
19 pick all the ones -- all of the claimants from
20 category four?

21 **DR. MAKHIJANI:** I believe -- I haven't gone
22 over Ron's work, but I believe that's what he
23 did. He just sent me the results, and I
24 haven't actually identified --

25 **MR. GRIFFON:** Well, we'll -- we'll just make

1 sure that --

2 **MR. FITZGERALD:** Yeah.

3 **MR. GRIFFON:** -- all these -- all these IDs get
4 to NIOSH as -- as quickly as possible, and if -
5 - we'll check -- we can do this off-line,
6 Brant, but you can check with SC&A and make
7 sure you have everything you need as quickly as
8 possible.

9 **DR. ULSH:** That sounds fine.

10 **MR. GRIFFON:** And if there's -- you know, and -
11 - and they key I think that we've come down
12 with is that out of the additional random
13 samples, no more than 20. Let's keep it under
14 that. Okay. Then we don't need a formal plan,
15 Joe, is the answer to your question.

16 **MR. FITZGERALD:** Right, just the identity.

17 **MR. GRIFFON:** Right, just the identities would
18 do it.

19 **PRIVACY ACT REVIEW**

20 The second item on completeness is SC&A to
21 provide a draft report to Emily Howell for
22 Privacy Act review. Let's not forget about
23 this one, that -- that once you have a report
24 on these issues, we have to -- and I think we
25 need -- maybe I can get a clarification on the

1 timing on this because once a report is
2 submitted to you, how -- how long will it take
3 -- I know that's tough to -- to answer, but how
4 long, about, might it take us before we can
5 pull it out in a public meeting?

6 **MS. HOWELL:** Well, it's going to depend a
7 little bit on the length of --

8 **MR. GRIFFON:** Right.

9 **MS. HOWELL:** -- what you're asking us to
10 review, obviously.

11 **MR. GRIFFON:** Yeah.

12 **MS. HOWELL:** The other issue is going to be
13 whether or not we have to involve the NIOSH
14 Privacy Act officer, which would also extend
15 it. But -- I don't really want to give you a -
16 - a firm --

17 **MR. GRIFFON:** Yeah.

18 **MS. HOWELL:** -- deadline. I mean we can work
19 with you if -- if you're giving us something
20 and you know that you need it by a certain
21 date, let us know that and we can expedite it,
22 but --

23 **MR. GRIFFON:** But based on like a report the
24 size -- similar to the size of the last report
25 that was submitted by SC&A --

1 **MS. HOWELL:** I don't know how -- I'm not sure I
2 saw that. I know that I recently reviewed a
3 document that Arjun and Kathy DeMers had put
4 together with their closeout interview notes,
5 and I know that that -- the turnaround was
6 probably like four to five days, and that was
7 30 pages, so -- but it could be quicker, I -- a
8 week.

9 **MR. GRIFFON:** But to be safe we should probably
10 build in a week --

11 **MS. HOWELL:** I would build in --

12 **MR. GRIFFON:** -- for this kind of thing, okay.

13 **MS. HOWELL:** -- a week. That would be the most
14 helpful, yes.

15 **MR. GRIFFON:** Yeah.

16 **MR. PRESLEY:** Emily --

17 **MS. HOWELL:** Yes?

18 **MR. PRESLEY:** -- would it help you all if you
19 were given the case numbers prior -- when we
20 give them to NIOSH so that you can go back and
21 look in the cases to see if there are any
22 problems that you might see before you get this
23 report?

24 **MS. HOWELL:** I hesitate to say yes, just
25 because it could lead to a duplication --

1 **MR. PRESLEY:** Right, I realize that --

2 **MS. HOWELL:** -- of work and doing thing twice.

3 **MR. PRESLEY:** -- but I'm trying to help you
4 with time, too.

5 **MS. HOWELL:** Right. Why don't we try that at
6 first and -- this is just going to be kind of a
7 process to kind of figure out how things will
8 work best --

9 **MR. PRESLEY:** Right.

10 **MS. HOWELL:** -- I guess.

11 **MR. PRESLEY:** And if it -- if it doesn't, you
12 can throw it away.

13 **MS. HOWELL:** Right.

14 **DR. WADE:** Now remember -- this is Lew Wade
15 again -- let's just talk about the reality of
16 this Privacy Act situation. SC&A, NIOSH, the
17 ORAU team, the Board members can all see
18 Privacy Act information. It's information that
19 we're going to put on the table for the public
20 to see, and we all like to do our business in
21 full public view. If you were to find yourself
22 in a situation where that information has to be
23 discussed, we could close a workgroup meeting,
24 there are various ways we could deal with
25 Privacy Act information if this review wasn't

1 complete. I think we should all strive to see
2 that it's complete and done and we can do our
3 business in the light of day, but there are --
4 there are other alternatives if you find
5 yourself in a -- a tight time frame.

6 **MR. GRIFFON:** Right.

7 **DR. MAKHIJANI:** Could I ask just a procedural
8 question about that, then. When our report is
9 done of course we try to exercise caution on
10 our -- our side, but -- so we can distribute --
11 we can put a label saying this may contain
12 Privacy Act material and distribute it to the
13 working group in the interim by e-mail?

14 **MS. HOWELL:** You can distribute it to the
15 working group. The concern is more that, you
16 know, once you guys get it, it's very difficult
17 when we're in that meeting for -- you guys need
18 to be able to discuss things freely, and the
19 concern is that what you're distributing to the
20 working group may have information that should
21 have been redacted in it, and then they bring
22 their copies to the working group meeting and
23 are reading from their non-scrubbed, non-
24 redacted copies, thinking that perhaps maybe it
25 has been scrubbed. So I -- I appreciate

1 putting the label on it, but it may not
2 alleviate the problem. So I guess I'd just say
3 go ahead and do that, but understand that we
4 still need to see things and we still need to
5 just have a heightened sense of awareness about
6 this concern during the working group meetings.

7 **DR. WADE:** Right and cer--

8 **MS. HOMOKI-TITUS:** This is Liz. Let me add --
9 can you hear me?

10 **DR. WADE:** Yes.

11 **MS. MUNN:** Yes.

12 **MS. HOMOKI-TITUS:** Okay. Let me add to that
13 that we are currently reviewing the new OMB
14 directive regarding the use of e-mailing
15 (unintelligible) arrangements. SC&A will be
16 receiving notification from the contracting
17 officer regarding the new guidance
18 (unintelligible) the Department is
19 (unintelligible) right now (unintelligible) put
20 together on that issue, so just be aware of
21 that. I know that you're following the policy
22 that you've used in the past, but the policy
23 may be changing.

24 **DR. WADE:** So our goal for all of us is
25 redacted information wherever possible. If

1 we're not in that situation, it doesn't
2 preclude the working group getting material.
3 And yes, Arjun, if you were to supply that
4 material it should be clearly stamped and
5 identified.

6 **DR. MAURO:** The last point, though -- this is
7 John Mauro -- I think is important to I guess
8 keep in mind is it sounds like issues related
9 to e-mailing --

10 **MR. GRIFFON:** Right.

11 **DR. MAURO:** -- is still up in the air and we
12 will be hearing some guidance shortly, because
13 we're in the middle of the work right now, and
14 you will be corresponding with Brant and the
15 other members of the -- on its -- cases
16 selected, perhaps some information, and it
17 sounds like that we may not be able to e-mail
18 that material until we get further guidance.
19 Is that correct?

20 **MR. GRIFFON:** Well, under the current policy I
21 think we can. Right?

22 **DR. WADE:** I would do --

23 **MS. HOWELL:** For right -- we're looking into
24 the new --

25 **MR. GRIFFON:** Yeah.

1 **MS. HOWELL:** -- OMB circular, and for right now
2 just be prepared for things to change, I guess
3 is what I would say, but continue as you've
4 been working, but just be ready for a -- a new
5 proc-- new procedure to possibly take effect.

6 **DR. WADE:** Until you're formally notified by
7 the contractor --

8 **MR. PRESLEY:** Question --

9 **DR. WADE:** -- continue business as usual.

10 **MR. GRIFFON:** Right.

11 **MR. PRESLEY:** If -- if SC&A sends this report
12 out on a diskette, you're not going to get it
13 that day, but the next day if they do it
14 Federal Express, which is going to make legal's
15 headache a whole lot easier or smaller. And
16 I'm just wondering about if we get a -- a
17 diskette rather than putting this on e-mail --
18 I'm very much aware of what you're going
19 through and I can tell you things are going to
20 change drastically.

21 **MS. HOWELL:** In terms of supplying the
22 information on CDs or diskettes, I would hold
23 off on that as well because we're still unsure
24 of how the OMB circular and those policies --
25 if that adequately addresses the concerns or

1 not, so I guess I would just say --

2 **MR. PRESLEY:** E-mail? That's fine.

3 **MS. HOWELL:** -- continue to do what you're
4 doing until we've had a chance to let you know
5 the new procedures.

6 **DR. MAKHIJANI:** Ms. Howell, it's still a little
7 confusing because until -- until the earl-- an
8 early November working group meeting, we were
9 e-mailing to the working group. We e-mailed
10 some information on Rocky Flats claims with the
11 names and other things redacted, and then we
12 were told that there may be Privacy Act
13 concerns. And at that time we were told not to
14 do e-mail, and then we were told we could -- I
15 just want to be explicit -- so we suspended the
16 use of e-mail, and then John and I corresponded
17 with Mr. Staudt about this, and I think you
18 know -- and I believe he said we could use e-
19 mail -- I'm not -- so I'm a little bit confused
20 about what business as usual means.

21 **DR. MAURO:** Perhaps I -- my understanding at
22 this time is that we continue in the mode we
23 have in the past regarding the exchange of
24 information between even SC&A personnel and
25 technical folks at NIOSH and ORAU as we have in

1 the past until we're given the formal direction
2 on that matter. So it's business as usual, but
3 that may change soon. But at the --

4 **MR. GRIFFON:** So business as usual means you
5 can exchange --

6 **DR. MAURO:** We can, and business as usual means
7 we can exchange --

8 **MR. GRIFFON:** At least for now.

9 **DR. MAURO:** Within -- within the umbrella of
10 the people who have access to Privacy Act
11 material, the only change that I've instructed
12 our crew is that when we do that we make sure
13 we have a cover on it that has the statement
14 that this is Privacy Act. So we were planning
15 to continue in that mode until we were
16 instructed not to do that any longer.

17 **MS. HOWELL:** Yes, that's fine.

18 **MR. GRIFFON:** And I think we all have the
19 intention to limit that kind of correspondence,
20 especially over e-mail, so --

21 **MS. HOWELL:** Yes.

22 **MR. GRIFFON:** But we'll operate that way until
23 we get final direction from you, yeah.

24 **MS. HOWELL:** Yes.

25 **MR. GRIFFON:** Or further direction. Okay. All

1 right, I'm going to move on to item three, if
2 it's okay, since we're, as usual, lagging on
3 our first agenda item.

4 NIOSH will provide access to all Rocky Flats
5 claimant files for designated SC&A staff.

6 NIOSH will assure Board members -- I think we
7 just mentioned this. Lew mentioned that access
8 has been reinstated, so the R drive access is
9 no longer an issue.

10 **OTHER RADIONUCLIDES**

11 On to item two, overall item two on the summary
12 list, other radionuclides. The first action
13 there was NIOSH will provide a semi-empirical
14 validation of thorium intake model, bou--
15 parentheses, bounding intakes estimated using
16 new Reg. 1400 approach. I'm not sure where we
17 stand on this, Brant. Do you -- you recall
18 this action?

19 **DR. ULSH:** Mark, I'm kind of working from the
20 matrix (unintelligible). There have been a
21 couple of back-and-forth exchanges between SC&A
22 and NIOSH on this issue. We provided Bryce
23 Rich's model, remember, and then SC&A had some
24 comments on that.

25 **MR. GRIFFON:** Yeah, but at the November 6th

1 meeting we had -- I think this is what -- Jim
2 Neton had brought up in discussions well, we
3 can resolve this all by maybe providing a semi-
4 empirical validation of the thorium intake
5 model.

6 **DR. ULSH:** Oh, okay -- now I remember, Mark,
7 okay.

8 **MR. GRIFFON:** And -- yeah, so that was Jim's
9 sort of offer on the table.

10 **DR. ULSH:** Yeah, but I'm in the process right
11 now of pulling together everything we've got on
12 thorium, and one piece of that is exactly what
13 you're talking about, Jim's suggestion that we
14 compare it to machining of other metals
15 (unintelligible) mainly of uranium, and then
16 use the (unintelligible) approach on that.

17 **MR. GRIFFON:** Okay, so that -- that's in the --
18 in process.

19 **DR. ULSH:** That's correct.

20 **MR. GRIFFON:** The second item, NIOSH will
21 provide available references regarding other
22 radionuclide use or dose estimates, and I think
23 this gets into the e-mail correspondence
24 between, Brant, you and Joe Fitzgerald. I saw
25 some of that on use of thorium document and --

1 **DR. ULSH:** Oh --

2 **MR. GRIFFON:** -- and underlying references, I
3 think that's --

4 **DR. ULSH:** -- I guess I'll take a crack at it
5 and then let Joe (unintelligible) his thoughts.
6 Joe and I did have a couple of exchanges on
7 this document called thorium use at Rocky
8 Flats. I found out -- well, with Mel -- Mel
9 and Bryce's help -- that the author of that was
10 -- that document was Bob Bistline. We
11 interviewed Bob Bistline and I think the upshot
12 of it was we know now who the author was. We
13 don't have to call it anonymous anymore. That
14 document was -- I think it was a report that
15 Bob prepared in response to public relations
16 issues that Rocky Flats had back in the
17 (unintelligible) '70s (unintelligible) related
18 to a farmer who lived near the Rocky Flats site
19 who was concerned about whether or not
20 radiation from Rocky Flats was causing
21 deformity in his animals. That was the reason
22 for the report (unintelligible) the report.
23 Now Joe I think was interested in the
24 supporting documentation that went into that
25 report. I don't think we've been successful in

1 getting that. Bob Bistline, as I understand,
2 couldn't really point us to any of the
3 supporting documentation. However, Bob issued
4 a report -- a paper that he wrote regarding
5 bio-effects of thorium and I think gave that to
6 SC&A, and that's really all I can recall about
7 that at the moment. Joe, do you want to add
8 anything to that?

9 **MR. FITZGERALD:** Yeah, just a little
10 background. Between the interview with the Dow
11 Madison petitioners on their SEC and their I
12 guess allegations of the linkage between that
13 site and Rocky Flats in terms of thorium
14 shipments, as well as this particular document
15 that we uncovered in our document retrieval, we
16 wanted to see if there was any way to
17 substantiate the quantities and the level of
18 handling for thorium at Rocky Flats. This
19 particular document that we're referring to
20 actually did have some numbers that were
21 pertinent, we felt, to the issue, some of which
22 was the parameter of -- the MUF parameter,
23 material unaccounted for. Another parameter of
24 normal operating loss cited 32 kilograms of
25 normal operating loss. And you know, given all

1 the discussions we've had on the topic, we have
2 found very little in the way of actual
3 measurements. You know, there's been sort of
4 expert interviews that suggested that the
5 handling was, you know, a very light handling,
6 very little got away. We have -- I guess NIOSH
7 has gone and looked at the materials inventory
8 and wasn't able to establish any sizeable
9 quantities in there. So this document was
10 important to us, not so much in terms of who it
11 was directed at -- and you know, it was
12 directed at an issue that came off-site where a
13 farmer alleged thorium -- I guess thorium
14 uptake in his livestock, which at the time
15 would have been pretty dramatic. Now
16 understand that the presence of thorium at
17 Rocky Flats during that time frame was highly
18 classified. It wasn't freely acknowledged, and
19 therefore records for thorium use would have
20 been tightly held. So this note was an
21 internal assessment on that particular issue,
22 just simply to characterize whether there would
23 have been a source term sufficient to have in
24 fact accounted for that uptake. So we weren't
25 so much interested in what the paper was

1 directed at, or even -- although interestingly
2 enough -- who it was written by. And we would
3 say there is a number of authors that
4 apparently contributed to it.
5 What we were interested in is the source
6 documents -- you know, where did these numbers
7 come from. And in conversations with Bob
8 Bistline it was pretty clear these numbers did
9 come from some records that were retained and
10 kept by Rocky, probably classified, certainly
11 now formally classified. And what we felt
12 would be important to settle this thing out,
13 instead of sort of having a debate between site
14 experts or a debate on a qualitative term, is
15 to see if we could find some documentation or
16 maybe NIOSH could find some references from --
17 which would contain some of these measurements
18 -- which I think would probably go a long ways
19 to characterizing, you know, was this a
20 significant handling of thorium or was it, as I
21 think we've seen in the evaluations that NIOSH
22 has provided to date, a very minimal, almost --
23 not a very significant handling of thorium.
24 So that's -- that's the origin of this issue,
25 which is frankly is there any source references

1 or source documents which -- from which these
2 numbers were derived.

3 Now talking again to Bob, as you have, Brant,
4 it's pretty clear that he doesn't recall that -
5 - and understandably. It's been quite a while.
6 But he does believe that there were documents,
7 there were records -- probably, again,
8 classified at the time -- that these
9 measurements would have come from. And you
10 know, this -- this is kind of what we've been
11 after, to find something with hard edges that
12 kind of defined what the source term might be
13 for thorium that would give us a basis for, you
14 know, sort of letting the chips fall where they
15 may in terms of the significance of the issue
16 and -- and that's where we stand right now.
17 And I think our last exchange was, you know, we
18 certainly can't go any further on this issue
19 without locating these records or documents.
20 And I think what we said was in your ongoing
21 search for these documents is pretty much where
22 we're at in terms of these references.

23 **DR. ULSH:** Mark, I guess I just want to get a
24 feel from you how you want this meeting to go.
25 I kind of (unintelligible) is this basically

1 just to update the status. In that regard, in
2 response to any questions about thorium, we
3 have located a number of additional documents
4 that we're going to be summarizing and
5 (unintelligible) a number of other additional
6 interviews. I don't know if this is the time
7 to really go into the details on that, Mark.
8 (NOTE: The technical problem with telephone
9 participants was resolved from this point
10 forward.)

11 **MR. GRIFFON:** No, no, I think -- I think you're
12 right, but it's good to know that you've --
13 you've identi-- you know, just the status that
14 you've identified that and you're working on
15 the issue I guess is the -- the update. I mean
16 you -- we've only got about, you know, a half-
17 hour here or so.

18 **MR. FITZGERALD:** Yeah, the only question --

19 **MR. GRIFFON:** Yeah.

20 **MR. FITZGERALD:** -- I would add that for Brant
21 is --

22 **DR. ULSH:** (Unintelligible)

23 **MR. GRIFFON:** Okay.

24 **MR. FITZGERALD:** Just one final question is to
25 -- in terms of Brant's review. Were any of

1 these values coming up in the documents that
2 you've been able to locate?

3 **DR. ULSH:** Well, no, I haven't seen anything
4 that speaks specifically about material
5 unaccounted for and normal operating losses
6 other than the original material account
7 ledgers which were reviewed by Mel and Bryce,
8 and those documents are classified. They are
9 located in the (unintelligible) Federal Records
10 Center and they are (unintelligible) maximum
11 (unintelligible) 168 kilograms, so I think that
12 these quantities are probably concluded from
13 the material (unintelligible) account ledgers.
14 Again, I'm not an expert on how to
15 (unintelligible), but that's probably the best
16 source on how much thorium was at Rocky Flats
17 over -- over time. Those are classified, but
18 (unintelligible) working group
19 (unintelligible), but we do have other records
20 that don't speak necessarily (unintelligible)
21 in terms of, you know, specific material
22 (unintelligible) accounting (unintelligible)
23 talk about quantities of thorium that were
24 handled at Rocky Flats and what they were doing
25 with it (unintelligible) part of the

1 (unintelligible) I'm preparing right now.

2 **MR. GRIFFON:** Okay. Arjun has a --

3 **DR. MAKHIJANI:** Yeah, just a couple of
4 comments. We -- we actually -- you know, the
5 1976 paper corresponds fairly closely with the
6 NIOSH paper in terms of the inventories of
7 thorium. The -- the -- the questions that it
8 raises are not about what was in stock at Rocky
9 Flats at any time in regard to thorium, but in
10 -- in two other regards. The normal operating
11 losses of 32 kilograms cumulative up to 1976
12 seems rather large for the type of work that
13 was described in working group meetings by
14 NIOSH. That is, parts were received from
15 someplace and if there were some rough surfaces
16 or if they did not fit, they were lightly
17 treated. Now this 1976 document does not talk
18 about any light working-over of some parts. It
19 talks about manufacturing for customers. And
20 the light machining -- it may be compatible
21 with 32 kilograms, but -- but it does seem
22 rather significant. And also the 32 kilograms
23 may provide some indication of the total amount
24 of thorium processed. To date we don't have
25 any -- any -- any estimate for the amount

1 processed in the '50s, '60s and early '70s when
2 most of it probably happened. And if losses
3 are a couple of percent, then it -- it gives
4 you -- it gives you maybe an idea of the order
5 of magnitude of material that might have been
6 processed. Less than Y-12, but nonetheless
7 significant. And if it -- especially if it
8 were manufactured. So that's the -- that's the
9 specific interest in this document is -- is not
10 about stocks of materials, which doesn't get
11 you quantitatively to the exposure ideas or
12 validation of the exposure that's needed.

13 **DR. ULSH:** Okay, I understand your concern,
14 Arjun. Do you have much more information to
15 provide me not only about the quantities
16 involved but the types of operations involved.
17 I wouldn't want to (unintelligible) which
18 version of Bryce's write-up you've seen, but I
19 think the first entry in that table talks about
20 machining and light machining, and -- I can't
21 remember exactly, but -- but that has been in
22 Bryce's write-up. (Unintelligible) and that it
23 was very minimal (unintelligible) detail
24 provided to you in the summary (unintelligible)
25 --

1 **MR. GRIFFON:** Okay.

2 **DR. ULSH:** -- and some additional information
3 beyond what we had when we wrote that.

4 **MR. GRIFFON:** Okay, that -- that's good. I
5 think that's as far as we can go at this point.
6 We -- we need to move along on our status
7 updates.

8 **MS. MUNN:** Refresh my memory one more time.
9 The source of the 32 kilogram concern is what?

10 **MR. GRIFFON:** This -- go ahead.

11 **DR. ULSH:** It's a document issued by Bob
12 Bistline, he was the primary author. As Joe
13 mentioned, there were other people, other
14 contributing authors, but the title of it is
15 called "Thorium Use at Rocky Flats," the year
16 of publication -- was it 1976, Joe?

17 **MR. FITZGERALD:** 1976, yeah.

18 **MR. GRIFFON:** Yeah, 1976.

19 **MS. MUNN:** '70s -- '70s, Bistline's paper was.
20 Thank you. Appreciate that, thanks. I
21 couldn't remember where that had come from. I
22 remember the concern, sharply.

23 **MR. GRIFFON:** Okay. Is it all right if we move
24 along on the agenda?

25 **PROVIDING INTERVIEW NOTES**

1 The next point was providing interview notes --
2 NIOSH will provide applicable interview notes
3 regarding other radionuclides at Rocky Flats.
4 I think that was -- was that done?

5 **MR. FITZGERALD:** Yes, that was done.

6 **MR. GRIFFON:** Yeah.

7 **MR. FITZGERALD:** Thank you.

8 **MR. GRIFFON:** So -- so that's completed. And
9 then the fourth item is SC&A will further
10 review information provided by NIOSH regarding
11 plutonium and curium, and you've done that and
12 you -- you're in agreement with NIOSH's --

13 **MR. FITZGERALD:** Right, and we'll cover that in
14 the evaluation review, but yeah, I think we're
15 --

16 **MR. GRIFFON:** Okay.

17 **MR. FITZGERALD:** -- fine now.

18 **D AND D PERIOD**

19 **MR. GRIFFON:** All right, on to number three,
20 which is D and D workers. The action here,
21 NIOSH will provide termination bioassay data
22 available for Rocky Flats worker during D and D
23 period. This data will include information
24 indicating whether each individual worked for
25 the prime contractor or a subcontractor. And I

1 think you've taken a little different path,
2 Brant, on this. Is that true, or...

3 **DR. ULSH:** I don't want to --

4 **MR. GRIFFON:** I don't think you've --

5 **DR. ULSH:** -- mix up issues, Mark, but I think
6 this is -- you know, you mentioned that we had
7 a conference call last week with SC&A to talk
8 about OTIB-38. We have committed to extending
9 the internal coworker data through an OCAS TIB.
10 That was provided on the 8th of -- of December.
11 We also still owe you a piece -- owe the
12 working group and SC&A a piece on looking at
13 termination bioassays and seeing if there are
14 any differences between top tier contractors
15 and subs. We have completed the analysis for -
16 - for plutonium. We are currently completing a
17 similar analysis for uranium. Is that the one
18 you're thinking of, Mark?

19 **MR. GRIFFON:** Yes, yes, I'm sorry. Yeah.

20 **DR. ULSH:** We still owe you that. That should
21 be coming fairly quickly.

22 **MR. GRIFFON:** Okay. But as far as -- if I
23 understand from our conference call correctly,
24 the -- it's going to be too cumbersome to roll
25 the -- the action item says that the data will

1 -- the data will be provided and will include
2 whether the individual worked for the prime or
3 subcontractor. Is that going to be all on the
4 spreadsheet or just a summary of your review of
5 the data, I think is --

6 **DR. ULSH:** Well, what I was thinking was a
7 summary, Mark, but if --

8 **MR. GRIFFON:** Yeah.

9 **DR. ULSH:** -- you'd like more detail, I mean we
10 can discuss that, but --

11 **MR. GRIFFON:** Well, I -- I think that -- I
12 think your -- your rec-- the initial action
13 says the data, so I'm just trying to get a
14 clarification.

15 **DR. ULSH:** Yeah, I think -- if you recall the
16 way this conversation was going -- has gone
17 with the D and D era, there was originally some
18 debate between -- I don't know, debate might be
19 too strong a word -- discussion between NIOSH
20 and SC&A about, you know, who was monitored and
21 who wasn't during the D and D era, and NIOSH's
22 original position was everyone who had the
23 potential for 100 millirem or more was
24 monitored. We still hold that position, but I
25 just kind of decided that look, at the end of

1 the day, I think the quickest way to closure on
2 this is if we just extend -- go ahead and
3 extend the data, you know, provide coworker
4 data all the way through the D and D era, and
5 then, you know, perform this analysis that Gene
6 Potter's been working on looking at whether
7 there's any statistically significant
8 difference between the primes and the subs. So
9 that's kind of the path that we followed to get
10 to this point.

11 I hope that the action items that we're
12 pursuing are going to be responsive to the
13 concerns, but if not, certainly let me know and
14 we'll --

15 **MR. GRIFFON:** No, I -- I guess -- I guess the
16 impression I had at the last workgroup meeting
17 was that it was a fairly simple thing to do to
18 -- to pull in this contractor field into the
19 database and let us all --

20 **DR. ULSH:** Oh, I see, so are -- are you asking,
21 Mark, if we can put -- kind of replace the
22 version of HIS-20 that we currently have on the
23 O drive with one that also has the contractor
24 field? Is that what you're --

25 **MR. GRIFFON:** Well, that was -- that was just

1 one way to allow us to see what you -- see what
2 your analysis had concluded, you know.

3 **DR. ULSH:** Okay.

4 **MR. GRIFFON:** That -- that's what I thought we
5 were asking for was that that extra field be
6 added in --

7 **DR. ULSH:** Oh, I see --

8 **MR. GRIFFON:** -- and then you also provide your
9 analysis of, you know --

10 **DR. ULSH:** Okay. Jennie, you're --

11 **MR. GRIFFON:** -- subcontractor versus prime.

12 **DR. ULSH:** -- on line, right?

13 **MR. GRIFFON:** Excuse me?

14 **UNIDENTIFIED:** (Unintelligible) Brant.

15 **DR. ULSH:** Okay. Jennie, can you mark that
16 down as an action item for us?

17 **UNIDENTIFIED:** Yes.

18 **DR. ULSH:** Okay, thanks. We'll get on that,
19 Mark.

20 **MR. GRIFFON:** Okay.

21 **MR. FITZGERALD:** I gue-- I guess I have one --
22 one question, Brant. You know, this -- this
23 thing originated with the comment I guess that
24 the rad worker-2 training was a key
25 discriminating factor as to, you know, who in

1 fact was allowed entry into radiological zones
2 for D and D, so these were the individuals we
3 were keying in on. I think your response at
4 some point was that it would be very difficult
5 if not untenable to -- to actually marry up the
6 rosters for the rad-2 workers with the -- with
7 the termination bioassays and -- and dose
8 fields, and I think that then led you to this
9 next option, which was to aggregate all the --
10 I guess the termination bioassays for the subs
11 and to take the -- I think it was top six top
12 tier prime contractors. Now --

13 **MR. GRIFFON:** Subs.

14 **MR. FITZGERALD:** No, I think it was the top
15 tier -- six top tier and then all the subs. I
16 think there's 209 I think was mentioned -- the
17 number that was mentioned at the last
18 discussion we had on this and you were going to
19 do the -- compare the aggregate results from
20 the termination bioassays between the two
21 groups. Now the only caution I would have on
22 that -- and I haven't seen anything so it's
23 just really a caution at this point -- is that
24 -- you know, originally we were keying in on a
25 certain group that was earmarked by virtue of

1 the fact that because they're rad worker-2
2 trained the presumption is that they would have
3 had a potential of gaining entry into these
4 radiological areas where there would have been
5 a -- perhaps a potential of 100 millirem or
6 more of exposure during D and D. Now that
7 you're suggesting Gene Potter's going to
8 aggregate 209 subcontractors, that gives me
9 some pause because it's not clear to me who
10 those 209 subcontractors may be. And clearly
11 for sites like Rocky and other sites, you know,
12 you may include a lot of subcontractors who
13 would never get near a radiological zone and my
14 concern is, you know, you've got the vending
15 machine suppliers, you've got -- you know,
16 you've got workers that were probably moving
17 dirt and -- and included in those might be a
18 subset that were in fact these D and D workers
19 that were badged and entering zones. But by
20 melding them into this large group, you might
21 in fact dampen down whatever, you know, data
22 you might have for those and, maybe not
23 surprisingly, you might have a problem trying
24 to compare that with the top tier. So I'm just
25 -- I'm just suggesting that maybe there might

1 be an issue in terms of over-aggregation. I'm
2 not sure about it, but certainly with that many
3 subs, that could be an issue.

4 **DR. ULSH:** Well, Joe, I guess -- I don't have
5 Gene on the line to talk about the details of
6 all this, but I just do want to make one
7 clarification that may or may not be important.
8 But when you talk about the numbers of
9 contractors, I want to point out that in the
10 top tier group -- I think there were nine --
11 but that's not necessarily nine individual
12 corporate entities. That is nine names and
13 variations of names. For instance, Kaiser
14 Hill; Kaiser Hill Rocky Flats; KH Rocky Flats.
15 And the same with the subs. I mean there were
16 variations. But like I said, I don't know if
17 that's important or not, but I just don't want
18 you to expect to see, you know, 209 subs and --
19 and only find, you know, 100-plus variations,
20 'cause that's what we're talking about.
21 Now with regard to your other question about
22 over-aggregation, I don't know. I thought the
23 original concern -- and this was I think maybe
24 your concern and maybe Mike Gibson's concern,
25 was subs might have a different distribution

1 than the primes. And of course I know that,
2 you know, the exposure potential for different
3 subs may very well be different based on the
4 kind of work that they do. But now you're
5 talking about moving into a job-specific
6 coworker analysis. I don't -- I don't know how
7 feasible that would be. I don't know, like I
8 say, the original concern was were subs
9 different from primes, and -- and so that's why
10 we took this approach.

11 **MR. FITZGERALD:** Well, no, I think the -- the
12 issue was whether the D and D workers were
13 different than the primes since the coworker
14 model is -- you know, is -- is founded on this
15 database --

16 **DR. ULSH:** Right, and (unintelligible) --

17 **MR. FITZGERALD:** -- and that was -- that was
18 the reason we had gone after it with the rad
19 worker-2 handle at first, and then I think you
20 came back and said that was impractical, and we
21 understand that, and certainly this is option
22 two and I'm just, you know, suggesting that now
23 the issue is just simply is there any way we
24 can get back to maybe these D and D workers
25 that we know are working on radiological D and

1 D as opposed to taking every sub that walked on
2 the site, which you know, by -- you know,
3 taking that large group, I think you're going
4 to change the distribution and I -- that's the
5 issue I -- I'm raising.

6 **DR. ULSH:** All right. Well, I hear your
7 concern. How about if we continue on as we
8 have started, we'll give you the analysis that
9 we've started, recognizing you may have this
10 concern. And I don't know, I guess we can
11 discuss with Gene whether or not there were
12 particular subs that were identified with D and
13 D work that could be pulled out and analyzed
14 separately. I mean I don't want to commit to
15 doing that. I just -- I'll commit to talk to
16 Gene to see if that's a feasible approach. If
17 it is, would that be the kind of thing that
18 you're talking about?

19 **MR. FITZGERALD:** Well, I think that and I think
20 Mark's original suggestion, if we could
21 actually see these demarcations in terms of
22 affiliations and the subs, there might be some
23 way to at least get some feel for, you know,
24 who makes up the -- the distribution. I mean
25 just -- when I heard the number 209

1 subcontractors, it just struck me that that's
2 probably just about all of them, and -- and
3 that includes a lot of what I would consider
4 non-radiological personnel, which --

5 **MR. GRIFFON:** Right.

6 **MR. FITZGERALD:** -- certainly would be a
7 difference.

8 **MR. PRESLEY:** Hey, Brant, this is Bob Presley.

9 **DR. ULSH:** Yes, Bob.

10 **MR. PRESLEY:** Is there any way that you can go
11 in there and separate these names out from the
12 prime contractors that were doing the hottest
13 jobs?

14 **DR. ULSH:** Bob, did you just say the prime
15 contractors that were doing the hottest jobs or
16 the --

17 **MR. PRESLEY:** Or the contractors, I'm sorry,
18 not prime, but the contractors.

19 **DR. ULSH:** Well, that's -- that's what was
20 rolling around in my head that I still need to
21 talk to Gene Potter about. I mean if we know
22 that there were particular subs that were doing
23 the actual D and D -- you know, knocking the
24 buildings down, I mean if we know that Company
25 X was involved in that --

1 **MR. PRESLEY:** Right, or the peop-- or the
2 people that were going in and actually putting
3 the -- the waste products into the drums and
4 things like that. If we can do that, then I
5 believe that's going to -- going to help and
6 lower your numbers drastically. Is that not
7 correct, Joe?

8 **MR. FITZGERALD:** I would -- I would assume so.
9 I just don't think that's as large a group as
10 the total numbers --

11 **MR. PRESLEY:** Right.

12 **MR. FITZGERALD:** -- of subcontractors.

13 **DR. ULSH:** Let me talk to Gene about that, see
14 how feasible an approach that would be. I
15 understand what you're asking and let me talk
16 to Gene and I'll get back to you on that one.

17 **MR. GRIFFON:** Okay.

18 **DR. MAURO:** Excuse me, Brant, this is John
19 Mauro. Just -- I'm trying to visualize what
20 the table -- the work product at the end of
21 this process would look like. Is it a table
22 that lists categories of subcontractors and
23 contractors with -- let's say we're talking the
24 results of bioassay analysis or external
25 dosimetry analysis. Is it going to be a

1 geometric mean and a standard deviation drawn
2 from let's say 1,000 workers, or are we going
3 to have a table with individual results for
4 individual workers? In other words, is it a
5 big roll-up where within one number, let's say
6 a geometric mean and a standard deviation, they
7 capture the exposures of hundreds of -- of
8 workers over a number of years, over individual
9 years? What's -- what -- what do you envision
10 the table to look like when you're done?

11 **DR. ULSH:** Well, John, right now what we've
12 done is we've got an analysis that covers I
13 think two different time periods in the D and D
14 era because there was a change in the MDA. Oh,
15 and -- oh, by the way, we're talking only about
16 termination bioassays here. So we've got a --
17 I -- I guess it's -- it's summary statistics
18 for the primes and the subs for those two
19 different time periods -- right now for
20 plutonium, but we were also going to do it for
21 uranium. In light of the conversation that
22 we've just had, I'm going to discuss with Gene
23 whether or not it would be feasible to perhaps
24 break up that sub -- subcontractor category to
25 see whether we can pull out -- you know, if

1 there -- if there were particular comp-- sub
2 companies that worked with -- you know, the
3 hands-on work, if -- if there's a way to maybe
4 separate those out and report summary
5 statistics on -- you know, like you said, the
6 geometric mean and standard deviation. That's
7 what I was thinking, anyway. I'm open to
8 discussion, but...

9 **DR. MAURO:** Yeah, let -- let me -- one of the
10 con-- one of the outcomes might be for a given
11 group of workers, a subcontractor, contractor,
12 the results are going to look like this. The
13 mea-- the geometric mean is below the low limit
14 of detection, and one sigma is below the low
15 limit of detection. And after all this work,
16 we're going to have data that says we have all
17 these different groups of people and the mean
18 and standard deviation are all below the lower
19 limit of detection, which -- 'cause I keep
20 seeing this in other datasets that I look at
21 when I do have access to large numbers, and
22 what happens is the vast majority of the
23 workers are below the lower limit of detection,
24 and then you get a handful that are up in the
25 range that are -- are above the limits of

1 detection. And what that means is that
2 aggregate data doesn't really -- so we could go
3 through all this, and when we're done we're
4 really not going to have information that's
5 going to help us making judgments, if that's
6 what --

7 **DR. NETON:** This is Jim. I would argue that's
8 not necessarily true.

9 **DR. MAURO:** Okay, yeah, 'cau-- go ahead.

10 **DR. WADE:** Speak up, Jim.

11 **DR. NETON:** I think there is meaningful data in
12 -- that are below the lower limit of detection
13 when you fit a distribution. And if you can
14 show there's no statistical difference between
15 those two populations, wherever the data may
16 fall, I think you've -- we can make a point as
17 to there are no difference between those two or
18 there are, whatever the case may be. There's
19 valuable information below the lower limit of
20 detection when you're plotting a distribution
21 like this.

22 **MR. GRIFFON:** Okay. I think we should hold off
23 on this discussion 'cause we have 15 minutes to
24 wrap up our status report. I think, Brant,
25 you're right on the actions and we can continue

1 the other discussions when we get, you know,
2 more along in the process, get the product from
3 NIOSH and --

4 **DR. NETON:** Okay.

5 **MR. GRIFFON:** -- and discuss it. Okay?

6 **DR. NETON:** All right.

7 **LOGBOOK ANALYSIS**

8 **MR. GRIFFON:** On to number four now, the
9 logbook analysis, and the first item, NIOSH to
10 post radiation files referenced in their
11 analysis on the O drive. Brant, I believe
12 you've done this.

13 **DR. ULSH:** Yes, that's correct, Mark.

14 **MR. GRIFFON:** Second item is SC&A to complete
15 their review of this, and I -- I believe it's
16 sort of ongoing, but it's --

17 **MR. FITZGERALD:** Right.

18 **MR. GRIFFON:** -- going to be rolled up in your
19 evaluation --

20 **MR. FITZGERALD:** They're rolled up -- rolled up
21 in the evaluation we plan to draft up at the
22 end of the month, right. We're working on them
23 now. And by the way, we will provide a interim
24 draft to the workgroup as soon as it's
25 finished, just as we did with safety concerns.

1 **1969 DATA GAP**

2 **MR. GRIFFON:** Okay. Number five is the 1969
3 data gap. NIOSH to post the available monthly
4 dosimeter -- dosimetry reports, and that was --
5 that was done. And then this claimant file
6 data, the cross-reference --

7 **MR. FITZGERALD:** Right.

8 **MR. GRIFFON:** -- was it posted as well?

9 **MR. FITZGERALD:** Right, and we -- we began that
10 and then had a interruption because of the data
11 access issues and have resumed doing the cross-
12 comparisons with the 70-some, you know, files
13 that -- that NIOSH made available, that Brant
14 made available to us, so we're operating on
15 those 70 and doing some cross-comparisons right
16 now.

17 **MR. GRIFFON:** I guess the -- the remaining
18 question for me in this time period is the --
19 the 1969 -- one of the monthly dosimetry
20 reports or quarterly, I forget if it was a
21 quarterly or monthly report, does discuss this
22 quo-- this practice of people that had security
23 badges and had the TLD badges within the
24 security badges at a certain point, after a
25 certain point -- I think it was 1964 -- but in

1 this quarterly report it says that there was a
2 practice initiated whereby certain workers that
3 were deemed at low radiation exposure risk,
4 even though they had the badge in their
5 security badge, the badge was not read out.
6 They didn't -- they didn't read it in the
7 laboratory and they -- and they did this based
8 on people that they deemed in low exposure
9 areas.

10 Now I -- I'm still not clear -- it -- it's
11 clearly in that monthly report. What I'm not
12 clear on is if it was a practice that was
13 initiated in 1969 and went -- and was ongoing
14 for a number of years or that was just a
15 practice for a short time period or -- or --
16 and I don't know if you have any -- I know,
17 Brant, you provided us just recently with a
18 document on badging practices, and I have not
19 had a chance to review that. Maybe that sheds
20 some light on this issue, but I guess that's
21 the one remaining thing for me in that category
22 is -- is --

23 **DR. ULSH:** Mark, yeah, I know exactly what
24 you're talking about in terms of that one
25 monthly progress report -- I think it was from

1 April of '69 -- that said -- I don't have it
2 right in front of me, but it said that people
3 judged at low exposure -- people who were on
4 quarterly badges and not stationed in plutonium
5 areas, they had low exposure potential, their
6 badges would no longer be read unless
7 circumstances warrant. And so we can make a
8 reasonable interpretation there that that
9 started, you know, right around the time of
10 that progress report. But as to when it ended,
11 I can't really say. We don't have any similar
12 notations that say okay, we've rescinded that -
13 - that past decision or not.

14 If you look at some of the other data sources
15 that we looked at, this '69 issue originally
16 came to our attention because I think Kathy
17 DeMers noted that there were a large number of
18 zero readings in '69, and so that's how we
19 originally started to look at this. We didn't
20 see that trend continue. It went away after I
21 think maybe '69 or '70. We didn't see those
22 large number of zeroes. So from that -- I mean
23 I don't know. You'd have to make the inference
24 that those two facts are related. I can't
25 really say that. I just don't have a

1 particular piece of documentation that says
2 that previous decision was rescinded. I just
3 don't know.

4 **MR. GRIFFON:** I think where this may become
5 important is our interpretation of the data
6 completeness questions, when --

7 **DR. ULSH:** Yeah.

8 **MR. GRIFFON:** -- when we review and find -- if
9 we find any gaps and we assume that they, you
10 know, had a badge but it wasn't measured during
11 a certain time period --

12 **DR. ULSH:** Right.

13 **MR. GRIFFON:** -- you know --

14 **DR. ULSH:** We do know that this was primarily
15 people who were not stationed in the plutonium
16 areas. And I'm also -- again, stepping out a
17 bit on a limb, just going by the way Arjun
18 described his interim results, that primarily
19 he's seen periods where people were not
20 monitored -- I think you said, Arjun --
21 external and in the '50s. Is that correct?

22 **MR. GRIFFON:** Yeah, yeah, it was -- it was
23 external and in the '50s that Arjun was
24 mentioning that.

25 **DR. MAKHIJANI:** That is correct, and it was

1 only in the '50s.

2 **MR. GRIFFON:** Now that was for the -- the
3 production workers, though, they -- they --

4 **DR. MAKHIJANI:** Yeah, that's more what I --

5 **MR. GRIFFON:** -- selected highly exposed --

6 **DR. ULSH:** Oh, I see.

7 **MR. GRIFFON:** Yeah.

8 **DR. ULSH:** Okay, so that probably wouldn't
9 apply to these --

10 **MR. GRIFFON:** Right, might not apply to this
11 thing, yeah, so I think -- that -- that's the
12 reason I keep pursuing this is the better we
13 can define this, if we have an endpoint to this
14 practice, then it helps us evaluate the
15 completeness issue --

16 **DR. ULSH:** Yeah, I understand.

17 **MR. GRIFFON:** -- that -- that is underway.

18 **DR. MAKHIJANI:** Yeah, we -- we are not looking
19 at these other practices as part of our
20 statistical data evaluation at the explicit
21 direction of the working group, 'cause this
22 came up in the working group meeting and that's
23 where the -- as Mr. Presley said, are we
24 looking at four or five different categories.
25 There were four or five different categories

1 talked about and the working group told us
2 that, as part of this analysis, don't worry
3 about the badging practices and the people who
4 were badged and the badges weren't read and the
5 subcontractors who don't -- didn't go in. We -
6 - we were leaving that out of the analysis, so
7 it may come in when we put in the job title or
8 --

9 **MR. GRIFFON:** Well, we're -- we're leaving it
10 out of the selection, anyway, yeah, yeah.

11 **DR. MAKHIJANI:** We -- well, if we can -- if we
12 can find easy information in the job
13 categories, we will put it in the table. We're
14 not explicitly going after explanations --

15 **MR. GRIFFON:** Right.

16 **DR. MAKHIJANI:** -- in this analysis.

17 **DR. ULSH:** Well, I think that's -- that's
18 really the heart of the story about whether or
19 not we should expect these people to be
20 monitored. I mean we do expect them to be
21 monitored and their records aren't here; i.e.,
22 we conclude that they're missing. Or we don't
23 expect them to be monitored. And that's the
24 kind of data that I guess we're going to be
25 looking at in terms of are these real gaps or

1 are they exactly what you would --

2 **MR. GRIFFON:** Yeah, and -- and that's why I'm
3 asking for, you know, some --

4 **DR. ULSH:** Yeah, I know what you're saying,
5 Mark.

6 **MR. GRIFFON:** -- sense of when this time period
7 ends.

8 **DR. ULSH:** I don't know, I'll poll the team and
9 see if there's any -- any ideas about how we
10 can I guess circumscribe this procedure.

11 **MR. GRIFFON:** So the badging practices document
12 that you just provided doesn't shed any light
13 on this.

14 **DR. ULSH:** I don't --

15 **MR. GRIFFON:** No.

16 **DR. ULSH:** -- have that in front of me, either,
17 Mark. I don't recall that when I read through
18 it.

19 **MR. GRIFFON:** Yeah, I don't think so, either.

20 **DR. ULSH:** I think it talked about what we have
21 just talked about, but it doesn't provide any
22 additional information beyond what I've just
23 stated.

24 **MR. GRIFFON:** Okay.

25 **DR. ULSH:** I could be wrong. Take a look at it

1 and I'll take another look as well, and I'll
2 talk to the team and see if we can figure out,
3 you know, another way to come at this.

4 **MR. GRIFFON:** Okay. I might --

5 **MR. GIBSON:** Mark, this is Mike. This also --
6 you know, determining -- if they weren't
7 stationed in a plutonium area, they didn't read
8 their badges, it kind of gets back to
9 characterization issue of the sites, too. If
10 you'll look at -- you know, once they tear
11 these buildings down, how many tons of
12 contaminated dirt did they tear out from --
13 away from these buildings. So even though
14 these people weren't assigned to a plutonium
15 building, we've had people come up hot working
16 in ditches at the Mound facility, so I think it
17 falls in the area of how well the sites are
18 characterized, too, as to whether these people
19 --

20 **DR. ULSH:** Mike, I need to make a couple of
21 clarifications here. First of all, we're only
22 talking about external dosimetry. And the
23 reason they -- well, one thing that facilitated
24 this decision to not monitor the people who
25 were on quarterly badges in the '69 time frame

1 that were outside the plutonium areas is
2 because the enriched uranium operations at
3 Rocky had been shifted to Y-12 in the mid-'60s.
4 There was almost no enriched uranium left in
5 terms of source term. Now you know, of course
6 there might have been some residual
7 contamination left, but -- so the primary
8 source term in these non-plutonium areas had
9 been gone from the site by then.

10 Now what you're talking about in terms of
11 characterizing the sites, I can see where
12 that's a pretty important issue in terms of
13 bioassay. You know, you've got people who are
14 working in putative low exposure sites and they
15 come up with a high bioassay and it makes you
16 wonder what's going on perhaps. But external's
17 a different beast. And there was a pretty
18 clear demarcation at Rocky Flats between the
19 uranium areas and the plutonium areas, so I
20 mean it's not -- I think it's just a little
21 different situation there.

22 **MR. GIBSON:** If I can follow up, I'm just
23 saying I can tell you that I know that there
24 was dirt that was shipped out as high level
25 radioactive waste, so that could in effect

1 affect the external monitoring, whether they
2 were bioassayed or not.

3 **MR. GRIFFON:** Okay. Well, we -- I think you
4 got the point, Brant, that if we can -- if we
5 can, you know, put a bracket on that practice,
6 that would be very beneficial in terms of the
7 analysis on this completeness issue.

8 **DR. ULSH:** Yeah, I'll take it up with the team
9 --

10 **MR. GRIFFON:** Yeah.

11 **DR. ULSH:** -- Mark, and see what I can come up
12 with.

13 **MR. GRIFFON:** Okay, yeah.

14 **DR. MAKHIJANI:** Could I -- Brant, could I ask a
15 question about the paper you sent on badging
16 practices? There's a table there, Table 1, in
17 which for '52, '53 and '54 -- '52 through '55
18 it shows less than 50 percent of the workers
19 were badged, and for '52 it was only five
20 percent. Maybe it was because of start of
21 operations or I -- if -- is there -- are there
22 kind of -- is there some record for those early
23 years about how that badging was done, because
24 this -- this would -- this corresponds to the
25 finding that we have that in those years there

1 were gaps.

2 **DR. ULSH:** Well, it's interesting that you
3 mention that, Arjun. First of all, I don't
4 have that write-up in front of me but I'm
5 recalling it. I've got to clarify that those
6 are claimants, not just, you know, all workers;
7 they're claimants. But you know, I would
8 expect the distribution of claimants to look
9 like the distribution of the workers at large.
10 And you're right, there is an increase
11 throughout the '50s, up until sometime in the
12 '60s. Again, I'm just recalling this from
13 looking at it.

14 **DR. MAKHIJANI:** Yes, until '64. It gets to 93
15 percent in '64.

16 **DR. ULSH:** Yeah, and that's the year that they
17 combined the security badge and the dosimetry
18 badge. And you're right that of course there
19 was a ramping up of operations. The site began
20 operations in '52, and so the operations were
21 ramping up throughout the '50s and it's -- I
22 mean at least consistent with, you know, that
23 ramp-up of activities that a higher percentage
24 of your workforce would be involved in
25 radiation work. And if you recall the

1 interview that you conducted with Roger, he
2 told you that the early years -- the practice
3 was that anyone -- I think -- what was it he
4 said, ten percent of the limit, anyone expected
5 to be at higher than ten percent of the limit
6 was badged? Of course you would expect that
7 proportion to rise as the activities --

8 **MR. GRIFFON:** Ten percent of the quarterly
9 limit you mean, not the limit of the badge, but
10 ten percent of the quarterly --

11 **DR. ULSH:** The regulatory limit.

12 **MR. GRIFFON:** Yeah, regulatory limit.

13 **DR. ULSH:** Yeah. So I mean what you're seeing
14 -- it's funny that you mention that, Arjun,
15 because when -- during that interview you had
16 with Roger, I was looking right at that and I
17 thought well, yeah, this is consistent with
18 what we're seeing here, so...

19 **DR. WADE:** I think we need to move on.

20 **NEUTRON DOSIMETRY ISSUES**

21 **MR. GRIFFON:** Yeah, let's -- let's go on to the
22 next item, neutron dosimetry issues. I think,
23 Joe, maybe you can give a real brief update.
24 We had a conference call on this last week.

25 **MR. FITZGERALD:** Yeah, we had -- that was one

1 of the issue-specific conference calls that we
2 agreed we would go ahead and do from the last
3 workgroup meeting, and we did hold that last
4 week. And I think there were -- and we
5 circulated amongst the Board members sort of a
6 reiteration of the specific actions that would
7 -- that NIOSH would provide. And I don't know
8 if there's any issues. I think there were a
9 number of -- of outstanding items, none of
10 which were, you know, overly significant but
11 certainly ones that would allow us to finish
12 the -- our assessment, and I think Brant and
13 his team committed to making that information
14 available to us relatively soon. So I think
15 that's kind of where -- in the interest of time
16 I won't go through each and every one of them.
17 I think the group has heard the five central
18 items before.

19 **MR. GRIFFON:** That's fine, yeah.

20 **DR. ULSH:** Those are at the top of the to-do
21 list as soon as the Advisory Board meeting is
22 over, so -

23 **SUPER S**

24 **MR. GRIFFON:** Okay. And item number seven is
25 the super S question, and I think the remaining

1 thing on the super S discussion was the review
2 of the other cases that were -- that -- that
3 had high burdens after the fire. And I think
4 these radiation files -- were they going to be
5 provided or -- or -- I don't know what the
6 status of that. Joe or Brant can --

7 **DR. ULSH:** Joyce has been working with Sam
8 Glover, and we have a list of the cases that
9 she wants to see. I guess we're going to have
10 to go to the folks at Mountain View 'cause not
11 all of these people are claimants, so we're
12 going to have to request their rad files and
13 get those for Joyce.

14 **MR. GRIFFON:** Okay. So these -- and that -- is
15 that a -- that sounds like it may take some
16 time, or how -- what's the time line on that?

17 **DR. ULSH:** Yeah -- well, it might, because the
18 Mountain View staff just moved offices, so that
19 put them out of commission for just a little
20 bit. I -- I can't really give you a date
21 certain, Mark. I'll check with the Mountain
22 View staff and see how backed up they are.

23 **MR. GRIFFON:** Okay. And -- and Brant, the only
24 other question on that is to -- NIOSH doesn't
25 have those -- I guess you don't have those rad

1 files in your possession from initial
2 development of this TIB?

3 **DR. ULSH:** I'm not sure. That's the first
4 thing I'm going to do is give the folks on the
5 ORAU team who worked on this a call and see --
6 I think they might have the data in a different
7 format. But I think what Joyce was wanting to
8 look at was the rad files. Is that correct,
9 Joe?

10 **MR. GRIFFON:** Okay, yeah, I mean I -- I think
11 she wants the raw data.

12 **MR. FITZGERALD:** Right, and she has looked at
13 the CER and HIS-20 and found some issues there
14 that we've discussed, and I think the idea was
15 to look at the raw data --

16 **MR. GRIFFON:** Right, right, right, right,
17 right.

18 **MR. FITZGERALD:** -- right.

19 **MR. GRIFFON:** No, I just thought in the process
20 of development of the TIB they would have went
21 back to the raw data. I'm not sure whether
22 that was done or not, but...

23 **MR. FITZGERALD:** Well, there might be a subset,
24 and I think that's something that would --

25 **MR. GRIFFON:** Yeah.

1 **MR. FITZGERALD:** -- bear Brant maybe pursuing
2 because certainly there's 19, but amongst those
3 19 I think maybe some of them might be part of
4 the model and the case group that was used in
5 the OTIB.

6 **MR. GRIFFON:** So you can narrow down the --

7 **MR. FITZGERALD:** Obviously --

8 **MR. GRIFFON:** -- request.

9 **MR. FITZGERALD:** Your -- the request might not
10 be as many as 19, I guess is the point.

11 **SAFETY CONCERNS**

12 **MR. GRIFFON:** Okay. The last two items, the
13 safety concerns, SC&A is going to write a
14 review of NIOSH's analysis and --

15 **MR. FITZGERALD:** Yeah, that was circulated in
16 interim form two weeks ago, and that will be in
17 our report at the end of the year.

18 **DATA INTEGRITY**

19 **MR. GRIFFON:** Okay. And the ninth item is the
20 data integrity issues, same thing there.

21 **MR. FITZGERALD:** Right, that's almost
22 completed. And again, we will provide that, as
23 we committed at the last workgroup meeting, to
24 the workgroup as soon as it's finished, and
25 that too will go into the --

1 **MR. GRIFFON:** Will be rolled into the
2 evaluation report.

3 **MR. FITZGERALD:** We're hoping to have that by
4 sometime next week.

5 **DR. WADE:** Okay, with that -- good, I think
6 we're done. We'll take a very quick stretch
7 break. This concludes the meeting of the
8 working group on Rocky Flats. Just a couple of
9 minutes and the subcommittee will convene, so
10 those on the phone bear with us. It'll just be
11 long enough for people to take a walk around
12 their chair. One moment.

13 (Whereupon, the meeting was concluded at 11:00
14 a.m.)

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CERTIFICATE OF COURT REPORTER**STATE OF GEORGIA****COUNTY OF FULTON**

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of December 11, 2006; and it is a true and accurate transcript of the testimony captioned herein.

I further certify that I am neither kin nor counsel to any of the parties herein, nor have any interest in the cause named herein.

WITNESS my hand and official seal this the 2nd day of January, 2007.

STEVEN RAY GREEN, CCR**CERTIFIED MERIT COURT REPORTER****CERTIFICATE NUMBER: A-2102**